

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-13. (Canceled).

14. (New) A warm-up method for an internal combustion engine, comprising;
increasing a temperature of the CO₂ absorbing and releasing agent, which absorbs CO₂ contained in an exhaust gas in a first temperature range and which releases the CO₂ absorbed therein in a second temperature range that is higher than the first temperature range, to the second temperature range which is higher than the first temperature range; and
supplying the CO₂ released from the CO₂ absorbing and releasing agent into a component of the internal combustion engine.

15. (New) The warm-up method according to claim 14, wherein
the component comprises an exhaust gas purification catalyst that purifies the exhaust gas discharged from the internal combustion engine.

16. (New) The warm-up method according to claim 14, wherein
the component comprises at least one of an intake manifold and a cylinder of the internal combustion engine.

17. (New) The warm-up method according to claim 15, wherein
the component comprises at least one of an intake manifold and a cylinder of the internal combustion engine.

18. (New) The warm-up method according to claim 14, wherein
the temperature of the CO₂ absorbing and releasing agent is increased to be brought
into the first temperature range after a command for stopping the internal combustion engine
is issued, and the temperature of the CO₂ absorbing and releasing agent is further increased to
be brought into the second temperature range after a command for starting the internal
combustion engine is issued.

19. (New) The warm-up method according to claim 15, wherein
the temperature of the CO₂ absorbing and releasing agent is increased to be brought
into the first temperature range after a command for stopping the internal combustion engine
is issued, and the temperature of the CO₂ absorbing and releasing agent is further increased to
be brought into the second temperature range after a command for starting the internal
combustion engine is issued.

20. (New) The warm-up method according to claim 16, wherein
the temperature of the CO₂ absorbing and releasing agent is increased to be brought
into the first temperature range after a command for stopping the internal combustion engine
is issued, and the temperature of the CO₂ absorbing and releasing agent is further increased to
be brought into the second temperature range after a command for starting the internal
combustion engine is issued.

21. (New) The warm-up method according to claim 17, wherein
the temperature of the CO₂ absorbing and releasing agent is increased to be brought
into the first temperature range after a command for stopping the internal combustion engine

is issued, and the temperature of the CO₂ absorbing and releasing agent is further increased to be brought into the second temperature range after a command for starting the internal combustion engine is issued.

22. (New) A warm-up system for an internal combustion engine, comprising;
a CO₂ absorbing and releasing agent that absorbs CO₂ contained in an exhaust gas in a first temperature range, and releases the CO₂ absorbed therein in a second temperature range that is higher than the first temperature range,
a heating unit that increases a temperature of the CO₂ absorbing and releasing agent;
and
a temperature control unit that controls an operation of the heating unit such that the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range, wherein
the CO₂ absorbing and releasing agent is provided to supply the CO₂ released therefrom to a component of the internal combustion engine.

23. (New) The warm-up system according to claim 22, wherein
the heating unit comprises an electric heater.

24. (New) The warm-up system according to claim 22, further comprising
an EGR passage that connects an exhaust passage and an intake passage of the internal combustion engine, and an EGR valve that selects an operation between connection and disconnection of the EGR passage, wherein:

the CO₂ absorbing and releasing agent is provided in the exhaust passage upstream of a joint portion between the EGR passage and the exhaust passage;

the component comprises an exhaust gas purification catalyst provided downstream of the joint portion; and

the temperature control unit controls an operation of the EGR valve such that the EGR passage is disconnected when the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range.

25. (New) The warm-up system according to claim 22, further comprising a turbo charger having a variable nozzle in an exhaust turbine, wherein the CO₂ absorbing and releasing agent is provided in the exhaust passage upstream of the turbo charger;

the component comprises an exhaust gas purification catalyst provided downstream of the turbo charger; and

the temperature control unit opens the variable nozzle when the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range.

26. (New) The warm-up system according to claim 22, further comprising a turbo charger having a variable nozzle in an exhaust turbine, wherein the CO₂ absorbing and releasing agent is provided in the exhaust passage downstream of the turbo charger;

the component comprises an exhaust gas purification catalyst provided downstream of the turbo charger; and

the temperature control unit closes the variable nozzle when the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range.

27. (New) The warm-up system according to claim 22, further comprising
an EGR passage that connects an exhaust passage and an intake passage of the internal combustion engine and an EGR valve that selects an operation between connection and disconnection of the EGR passage, wherein

the CO₂ absorbing and releasing agent is provided in the exhaust passage upstream of a joint portion between the EGR passage and the exhaust passage;

the component comprises at least one of an intake manifold and a cylinder of the internal combustion engine; and

the temperature control unit controls an operation of the EGR valve such that the EGR passage is connected when the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range.

28. (New) The warm-up system according to claim 27, further comprising
a turbo charger having a variable nozzle in an exhaust turbine, wherein
the temperature control unit closes the variable nozzle when the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range.

29. (New) The warm-up system according to claim 22, wherein:
the internal combustion engine is provided with a throttle valve; and
the temperature control unit closes the throttle valve when the temperature of the CO₂ absorbing and releasing agent is increased to be brought into the second temperature range.

30. (New) The warm-up system according to claim 22, wherein

the temperature control unit controls the heating unit to increase the temperature of the CO₂ absorbing and releasing agent to be brought into the first temperature range after a command for stopping the internal combustion engine is issued, and to further increase the temperature of the CO₂ absorbing and releasing agent to be brought into the second temperature range after a command for starting the internal combustion engine is issued.